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Banks vs. Credit Unions: A Comparative Analysis of Massachusetts Banks and Credit Unions Before, During and After the Recession

Mikaela Astore

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Caitlin Finning Golden, Thesis Director

Aimee Bonneau, Committee Member

Mary Beth Tobin, Committee Member

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Background Information

Both credit unions and banks offer deposits and loan products in addition to other financial services. However, many people do not know about their differences. It is important to consider the advantages and disadvantages to each when deciding what financial institution to use. Credit unions differ from banks because they are non-profit organizations. Credit unions are non-profit organizations because they operate to serve their members, not make a profit. Credit unions "do not issue stock or pay dividends to outside shareholders. Instead, earnings are returned to members in the form of lower loan rates, higher interest on deposits, and lower fees" (CUNA.org). Credit unions refer to the people that hold accounts at their institutions as members, instead of customers like banks. The main difference between credit unions and banks is how they are owned. Credit unions are not-for-profit organizations and are owned by their members, while banks can be either privately owned or publicly held. A publicly held bank is owned by its shareholders, while a privately owned bank is owned by a private entity, usually either a single owner or a large company. There are advantages and disadvantages to both private and public banking. One of the main advantages for public banking is the ability to use the financial markets to raise capital, such as stocks or bonds. An advantage for a privately owned bank is that owners do not have to listen to their stockholders, and therefore, can run the company the way they want. Since credit unions do not have outside owners pushing for increased profits, they may have lower fees and loan rates, while offering higher deposit rates. Another reason for this reduced rate is that credit unions are non-profit and do not have to pay taxes, therefore allowing money to be reinvested into the credit union.

While credit unions are able to control their financials from within the company, banks also have their advantages. Many banks offer better online services. Technology is a main part of

everyday lives. Small to medium size credit unions may not offer the same online services or the same degree of services desired by some people in today's society. Some argue that the biggest disadvantage to credit unions is their small size, as they cannot compete with larger banks that have the more resources (Bankrate.com). Another advantage of banks is the greater variety of financial products. Many banks offer ATM, debit and credit cards, while credit unions do not usually offer credit cards. Most banks offer a larger variety of loans whereas some credit unions do not offer student loans or commercial loans like many banks.

While there are many differences between banks and credit unions, there are also similarities. One important similarity is that both are federally regulated and insured. Credit unions are regulated through the National Credit Union Administration and insured through the National Credit Union Share Insurance Fund. Banks are regulated and insured through the Federal Deposit Insurance Corporation. Being federally insured means that in the event of an economic crisis you are guaranteed the amount that you have invested in the financial institution up to $250,000. This is very important because if your money is not insured, then you may not get any of it in a time of need. While it is important to be insured, it is also important to know if a credit union or bank is more stable during an economic crisis, so that you continue to earn a return on your investment and be able to pay a lower rate of interest on a loan product if you need to borrow. In order to provide the information on which financial institution is more stable and able to offer lower loan rates and higher deposit rates, I have performed an eleven-year analysis, from 2004 - 2014, on eleven banks and eleven credit unions. I will use this analysis to decide which is more stable and provides better rates during a recession. I hypothesize that credit unions will be more stable in an economic downturn.

Literature Review

In order to defend my hypothesis, I reviewed relevant research that has been performed in this topic. David Smith, an associate professor of economics and associate dean of academic affairs at Pepperdine University, and Stephen Woodbury, a professor of economics at Michigan State University, co-authored an article. Withstanding a Financial Firestorm: Credit Unions vs. Banks", and was published through Filene Research Institute. The authors aim "to describe how the same economic shocks treat the loan portfolios of credit unions and banks" (Filene). In their research, they found that the credit unions' highs are more restrained and their lows are more shallow than banks. This leads to the conclusion that, although credit unions are not immune to financial difficulties, they are much less susceptible to the economic cycle than banks. The article released interesting data points, "with every one percentage point rise in unemployment, banks lending growth declined 1.15 percentage points. Conversely, credit union lending does not correlate in a statistically significant way with the unemployment cycle" (Filene). They also state, "credit unions appear to be about 75% as sensitive to macroeconomic shocks as banks" (Filene). This supports my hypothesis by showing that credit unions are less susceptible to the economic downturn. According to the research article, for every 1% increase in unemployment, banks' lending decrease by 1.15%. This statistics is important to my research because during a recession, the unemployment is expected to rise. Since there is no correlation between unemployment and credit unions, the banks can prepare to suffer from lending loss, while credit unions will continue to perform relatively as usual. Another statistic in this article, states that credit unions are about 75% as sensitive to macroeconomic shocks as banks. This is important because it proves that the changes in credit unions numbers will not be as severe as banks. The majority of the time the banks number will be affected more significantly than credit unions.

This is key during an economic decline because the more sensitive the number, the more dramatic changes the financial institution will experience. Since credit unions numbers are less sensitive, they are less likely to change dramatically during hard economic periods.

Another article posted by US News supports the fact that credit unions are more resilient in an economic crisis when compared to banks. According to the article, "Don't Make Credit Unions Die for Banks' Sins", written by Jason Gold, "481 FDIC insured banks were either liquidated or merged between 2008 and 2012, compared to only 136 involuntary liquidations or mergers by credit unions" (US News). US News blames single-family mortgages as an underlying cause of the financial crisis. According to the research done by US News, "in 2009, credit unions saw their delinquency for mortgage loans peak at 1.61% compared to 8.86% at the banks" (US News). The delinquency for mortgage percentage shows the amount of people who are not paying on their mortgages. The higher the percentage, the less people who are paying their mortgages, therefore, financial institutions want this to be a lower percentage. The credit unions 1.61%, is much lower than the banks 8.86%. This supports my hypothesis that credit unions remain more stable during economic hard times. Not only did the credit unions have less delinquent loans compared to banks, their "share of first mortgages has actually increased as a percentage of total loans by 3.3%" (US News). This is good for credit unions because, not only were their members able to continue to make payments on their mortgages, they increased the amount of first mortgage loans during a difficult economic period.

In 2013, Business Insider released an article called "Here's Why You're Better Off Using A Credit Union Rather Than A Big Bank", written by Mandi Woodruff. The article takes key features that consumers find important and compare how banks and credit unions handle each of these features. According to the article, "a Gallup poll found that 74% of Americans had 'some or

very little confidence' in banks, while only 10% said they had a 'great deal' of confidence" in banks (Business Insider). While trust is not a ratio that can be looked at and compared to prior years, it is important for the reputation of the financial institution. Consumers are more likely to recommend an institution that they trust, and according to the poll, most Americans feel that credit unions are more trustworthy. Even though credit unions are perceived to be more trustworthy, only about one-third of Americans use credit unions. The key factors that the Business Insider article focused on were accessibility, checking account fees, interest rates, and customer service. Accessibility is very important to consumers. Banks have a lot of accessibility. They offer multiple ATM locations and plenty of branches. Credit unions, on the other hand, are meant to serve local communities. Therefore, once outside the local area, members may not have access to their credit unions. Many credit unions also offer ATMs, or use a shared market of ATM. A shared market of ATMs is when the ATM belongs to another institution, but the consumer does not get charged a fee for using the machine. When looking at accessibility as a whole, large banks have more accessibility because they offer locations outside of their local area. Checking account fees are something that nobody likes. According to the Business Insider, "more than 70% of the largest credit unions offer free checking, compared to 39% of banks" (Business Insider). This statistic shows that almost double the amount of credit unions offer free checking accounts compared to banks. Credit unions are far friendlier with fees, compared to banks. Credit unions offer higher interest rates on their accounts. This is because they are not-for-profit and they can reinvest in their members by offering them better interest rates. Thus, if a consumer is looking to receive a higher interest rate, they should look into a credit union. Business Insider states that in 2012, banks scored a 77 on the American Customer Satisfaction Index, while the credit unions scored an 82. These two numbers are very close, but nevertheless,

the credit unions had a higher satisfaction with customer service. Out of all the key factors that Business Insider looked into, credit unions were proven to be better in each category except for one, accessibility.

Methodology

I chose to analyze the years 2004 - 2014 because those years encompass data from before and after the 2008 recession. In order to provide comparable data, two steps were taken. First, banks and credit unions were chosen with an asset size between $325,000,000 and 450,000,000. Second only savings banks were used. Savings banks are different from commercial banks. Commercial banks provide more loans to businesses and industries compared to savings banks. Saving banks focus mainly on consumer loans, such as car loans and mortgages. With these two parameters, I used the FDIC and NCUA websites to search for banks and credit unions, respectively, within Massachusetts. The NCUA website provided a result of eleven credit unions in Massachusetts that had an asset range between $325,000,000 and 450,000,000 in assets. When searching the FDIC website, I found sixteen banks in Massachusetts that are savings banks and fell within the asset range. In order to choose the eleven out of the sixteen banks, I chose the banks that had the most similar asset size to the already chosen eleven credit unions. Once the eleven banks and eleven credit unions were chosen, the appropriate data was pulled from their call reports and inputted into an excel spreadsheet. Once the data was inputted, the appropriate ratios were calculated. After the ratios were calculated for each bank and credit union, for all eleven years, the averages were taken for each ratio.

Selected Banks and Credit Unions

The eleven banks that I chose to examine were Adams Community Banks, Beverly Bank, Eagle Bank, Everett Co-operative Bank, Haverhill Bank, Mechanics Co-operative Bank, Norwood Co-operative Bank, Randolph Savings Bank, Savers Co-operative Bank, Seamen's Bank, and Spencer Savings Bank. The eleven credit unions that were selected are Bridgewater Credit Union, Central One Credit Union, City of Boston Credit Union, Crescent Credit Union, Direct Credit Union, GFA Credit Union, Massachusetts Institute of Technology Credit Union, Polish National Credit Union, Quincy Credit Union, Sharon Credit Union, and UMassFive College Credit Union.

Adams Community Bank was founded in 1869. There are currently eight branch locations as well as nine ATM locations. Their main office is located in Adams, Massachusetts with other locations throughout Berkshire County. Beverly Bank opened its first charter on August 25, 1888. There are currently four branch locations, with the main office located in Beverly, Massachusetts. Eagle Bank opened its doors for the first time on May 11, 1889. There are currently six branch locations with ATM at each of them. Eagle bank is located in Boston, Everett, Lexington, and Medford, Massachusetts. Everett Co-operative Bank currently has two branch locations, one in Everett Massachusetts and one in Lynnfield Massachusetts. Haverhill Bank is the oldest Co-operative bank in Massachusetts. It opened on August 12, 1877. There are six branches in Massachusetts with ATMs at each. Haverhill bank has locations in Haverhill, Bradford, Merrimac, and Salem, Massachusetts. Mechanics Co-operative Bank has ten locations. They have branches located in Taunton, North Dighton, Bridgewater, Fall River, Westport, Swansea, and Somerset Massachusetts. Their corporate headquarters are located in Taunton; they also have a loan center that is located in Taunton. They opened in 1877. Norwood Co-operative

Bank established in 1889. They moved to their first building in 1919. They currently have one branch location in Norwood Massachusetts. Randolph Savings Bank has seven branch locations, with their main branch located on North Street in Randolph. There are stand-alone ATMs in six other locations. Randolph first opened its doors in 1851. Savers Co-operative was founded in 1910. They have six branch locations, located in Auburn, Charlton, Grafton, Southbridge, Sturbridge, Uxbridge Massachusetts. Seamens Banks was incorporated in 1851. Seamens main location is located in Provincetown, Massachusetts. There are also five other locations throughout the Lower Cape. Spencer Savings Bank was opened in 1871. They now have six branch locations and one stand-alone ATM. They are located in Spencer, Leicester, Warren, Rutland, and Worcester Massachusetts.

Bridgewater Credit Union has five branch locations and one call center. The branches are located in Bridgewater, Dover, Fairhaven, Plymouth, and Quincy Massachusetts. The call center is located in Bridgewater Massachusetts. Central One was established in 1952. Central One has four branch locations and five "bank at work" locations. Central One is located in Shrewsbury, Auburn, Northborough, Westborough, and Waltham Massachusetts. City of Boston Credit Union is one of the oldest credit unions in the United States. It was established on November 15, 1915. There are four branch locations, and twelve ATM locations. City of Boston Credit Unions are located in Boston, Dorchester, West Roxbury, and Canton Massachusetts. Crescent Credit Union was established in 1919. They were established in Brockton, Massachusetts and now have seven branch locations. Direct Credit Union started lending in 1953. They have one branch location, located in Needham Massachusetts. GFA Federal Credit Union has nine branch locations, and three additional ATM locations. The branches are located in Ashburnham, Gardner, South Gardner, Hubbardston, Leominster, Rutland, and Winchendon

Massachusetts. GFA Federal Credit Union was founded in 1938. Massachusetts Institute of Technology Credit Union (MIT Credit Union) has three locations. Two of the branches are located in Cambridge, and the other is located in Lexington. Polish National was founded on March 21, 1921 in Chicopee, Massachusetts. Their main office is located in Chicopee, and they have seven branch locations. Quincy Credit Union has two branch locations. Their main branch is located in Quincy and their other branch is located in Weymouth Massachusetts. Sharon Credit Union was opened in 1956. Sharon Credit Union has five branch locations with ATM located at each. The branches are located in Sharon, East Walpole, Mansfield, North Attleboro, and Foxboro Massachusetts. UMassFive College Credit Union (UMassFive) was established in 1967. They have five branch location and are involved in shared branching. They also have seven ATM locations. UMassFive has locations in Hadley, Northampton, Springfield, Amherst, and Worcester Massachusetts.

Data

Average for Banks	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
1.Total Non-Performing/Gross Loans	1.65%	1.49%	2.19%	3.01%	3.06%	3.09%	1.84%	0.75%	0.26%	0.15%	0.13%
2. Return on Assets	0.38%	0.53%	0.49%	0.40%	0.47%	-0.33%	-0.12%	0.42%	0.58%	0.63%	0.64%
3. Return on Equity	3.23%	3.11%	4.29%	3.69%	4.45%	-0.17%	-1.34%	3.65%	5.26%	6.04%	6.01%
4. Provision/Allowance	11.72%	20.37%	25.47%	32.53%	28.53%	44.96%	30.11%	10.77%	11.08%	10.32%	11.71%
5. Allowance/Gross Loans	1.05%	1.10%	1.13%	1.31%	1.43%	1.40%	1.19%	1.07%	1.04%	1.02%	1.08%
6. Interest Yields for Loans	1.95%	1.96%	2.79%	2.13%	2.20%	2.74%	3.23%	2.92%	2.61%	2.57%	2.43%
7. Interest Yields for Securities	5.41%	5.30%	5.53%	6.22%	6.96%	6.57%	6.83%	10.40%	10.90%	10.41%	10.18%
8. Total TDR/Gross Loans	1.31%	1.54%	1.69%	1.64%							

Averages for Credit Unions	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
1. Total delinquent loans/ Gross Loans	0.90%	0.99%	0.88%	0.98%	1.28%	1.28%	0.99%	0.77%	0.47%	0.50%	0.45%
2. Return on Assets	0.65%	0.55%	0.67%	0.52%	0.49%	0.20%	0.02%	0.41%	0.68%	0.78%	0.84%
3. Return on Equity	5.73%	5.19%	6.43%	5.15%	4.62%	1.35%	-0.82%	3.19%	5.63%	6.72%	7.27%
4. Provision/Allowance	16.54%	33.26%	27.68%	34.10%	47.57%	56.88%	77.14%	63.93%	50.38%	54.95%	50.32%
5. Allowance/Gross Loans	0.69%	0.77%	0.92%	0.91%	0.95%	0.93%	0.78%	0.63%	0.49%	0.50%	0.53%
6. Interest Yields for Loans	3.98%	3.98%	4.34%	4.86%	5.10%	5.34%	5.89%	6.42%	6.06%	5.53%	5.52%
7. Interest Yields for Securities	1.79%	1.75%	1.77%	2.11%	3.00%	3.88%	5.61%	9.59%	6.88%	3.71%	2.98%
8. Total TDR/ Gross Loans	0.34%	0.28%	0.33%	0.31%							

Ratios

I have computed the following ten financial ratios for each of the credit unions and banks:

1. Non-Performing Loans/Gross Loans
2. Return on Assets - Net Income/Total Assets
3. Return on Equity - Net Income/Equity
4. Provision for Loan Losses/Allowance for Loan Losses
5. Allowance for Loan Losses/Gross Loans
6. Interest Yields for Loans
7. Interest Yields for Securities
8. Total Troubled Debt Restructured/Gross Loans

After comparing the banks' and credit unions' ratios, my hypothesis was proven correct. Overall, credit unions were more stable during the recession. The key ratios to prove why my hypothesis is correct are total delinquent or non-performing loans to gross loans, return on asset, return on equity, provisions to allowance, allowance to gross loans, interest yields for loans, interest yields for securities, and troubled debt restructuring to gross loans.

Non-Performing Loans/Gross Loans

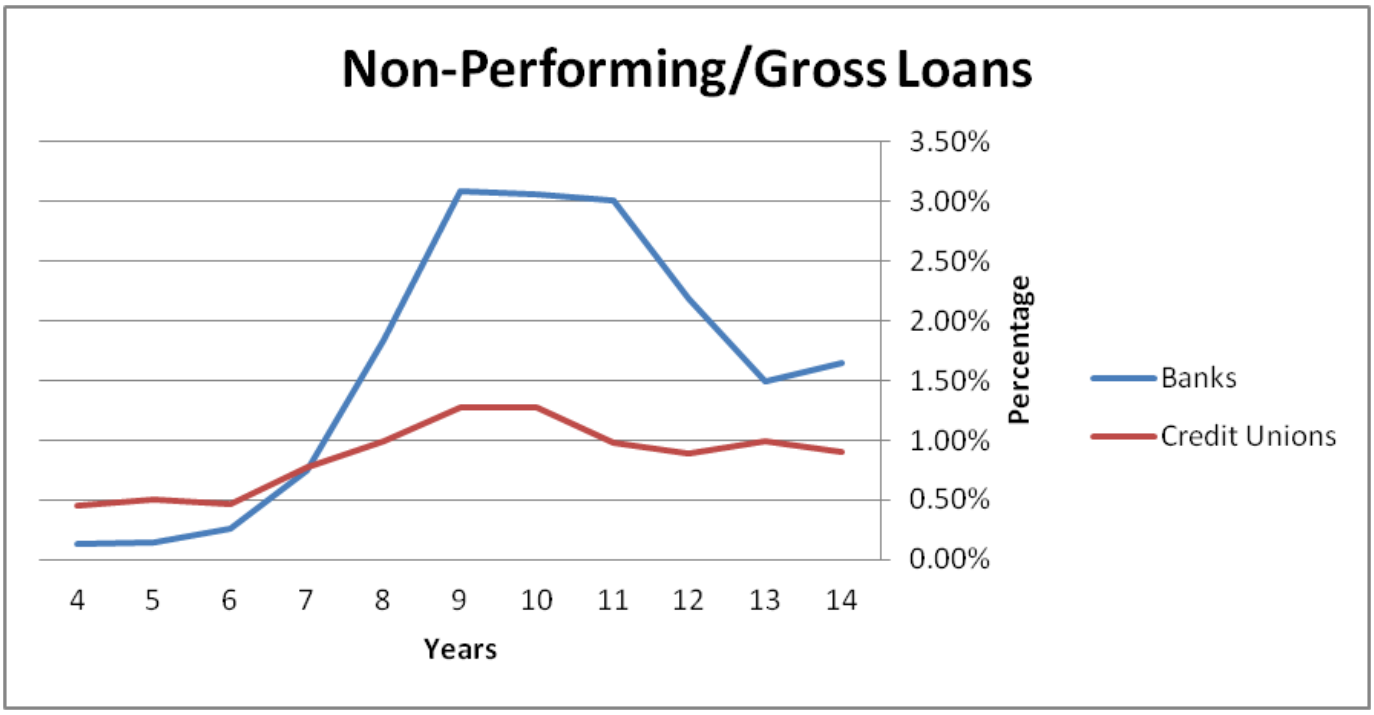
The total delinquent loan to gross loans was calculated for the credit unions and total non-performing to gross loans was calculated for banks. Both of these ratios calculate the percentage of loans that people have stopped paying on compared to the amount of total loans. The difference between the credit unions and the banks is that the banks disclose the loans that are 90 or more days past due, upon these 90 days the loans stop accruing interest. The credit unions disclose loans that are 60 or more days past due. Because the credit unions numbers include a larger span of days, the numbers are slightly overstated, as compared to the banks.

Even though the numbers are overstated for the credit unions, this ratio shows a better performance for credit unions versus banks. Since this ratio shows the percentage of people not paying on their loans, a lower percentage is favorable to the financial institution. When people stop paying their loans, the financial institution is losing profits because they are not collecting their interest income from the loans. Since loans are the financial institutions largest source of income, this is not good for the institute. The delinquency of loan payments results in higher interest rates because the financial institution needs to make up for this lost revenue and the costs that they incur trying to collect from customers.

The banks started with a lower ratio in 2004 of 0.13%. The ratio continued to increase each year. From 2008 to 2009, the ratio increased from 1.84% to 3.09%. This is the largest increase from year to year for this ratio. After 2009, the ratio begins to decrease again. There is a slight increase in 2014, but not as significant as others increases in the past. While the ratio did decrease a good amount from 2011 to 2014, the ending ratio in 2014 is 1.65% which is nowhere near as low as it started in 2004. This proves that the recession had a large impact on the performance of people paying on their loans.

While the credit unions started out with a higher average for their total delinquent loans to gross loans, 0.45% compared to 0.13% for banks, the credit unions remained more stable during the recession. The ratio gets to its highest peak in 2009 with a ratio of 1.28%. After 2010, the ratio begins to decrease, with a small increase in 2013 and then another decrease in 2014. The credit unions end with a ratio of 0.90% in 2014. This ratio is higher than 2004, however, the difference is much less than the banks. As mentioned above, the credit unions' ratios are slightly overstated because of the way that credit unions account for their delinquent loans compared to how the banks account for their non-performing loans. Even being overstated the ratio for the

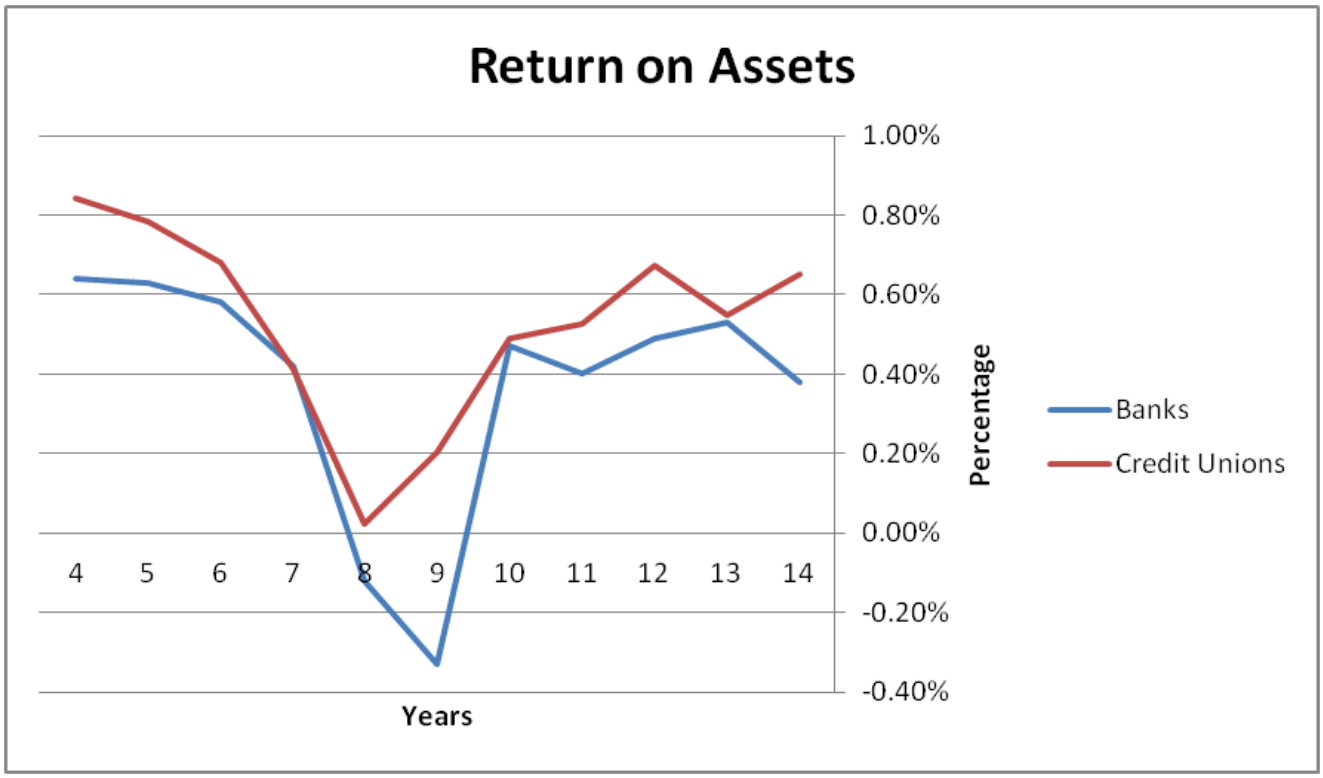
credit unions are more stable, and lower, than the banks. Graphical representation of this data is presented below.



Return on Assets

Return on assets is calculated by dividing net income by total assets. This ratio tells you how effectively you are managing your assets to produce profit, or net income. Return on assets can give the company an idea of how well management is doing at using its assets to generate income. The company wants a high return on asset ratio. The higher the ratio, the better the company is doing at using its assets to generate earnings. The banks ratio in 2004 was 0.64%. The ratio continues to decrease over the time span, going negative in 2008 and 2009. Return on assets becomes a negative ratio when the company experiences a net loss for the year. While the ratio does come back into the positives, it never gets as high as it did in 2004. Credit unions have a ratio of 0.84% in 2004. The credit unions were able to keep their average return on asset ratio from going negative, although it did come close in 2008 with a ratio of 0.02%. Although the

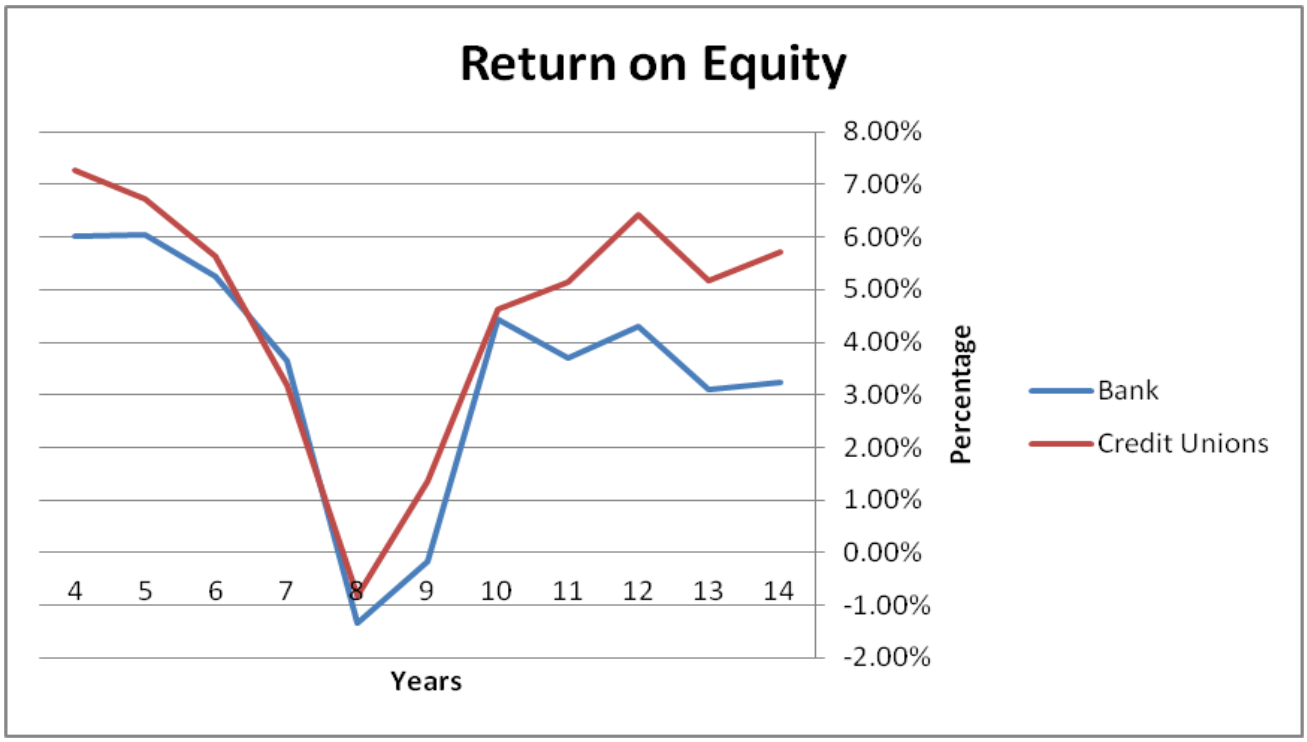
credit unions are also unable to get their ratio as high as it was in 2004, they have a ratio of 0.65% in 2014 which is almost double the banks ratio of 0.38%. In 2014, the banks ratio decreased from 0.53% to 0.38% while the credit unions increased from 0.55% to 0.65%. Both the banks and credit unions were affected by the recession. They both have severe dips in their ratio but are able to bring them back up. Credit unions are able to maintain a higher return on assets than banks and never going negative. Graphical representation of this data is presented below.



Return on Equity

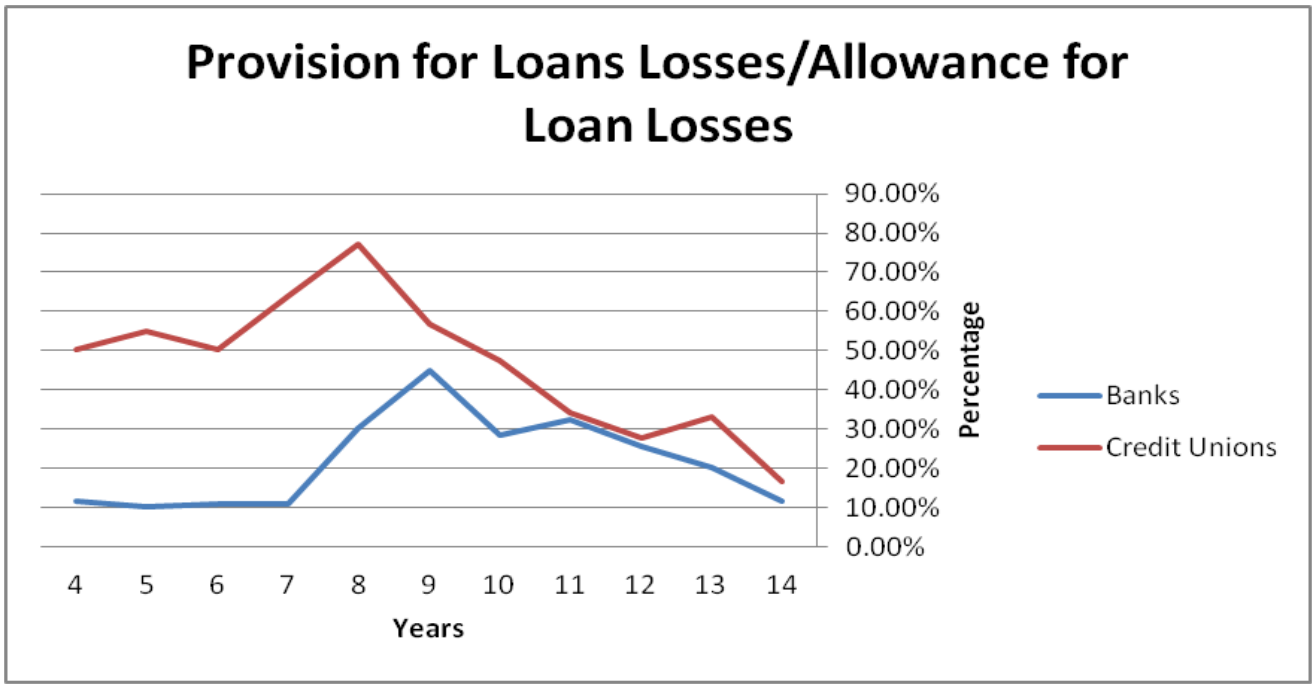
Return on equity is a profitability ratio that measures the ability of a firm to generate profits from its stockholders equity. It is calculated by dividing net income by equity. Similar to return on assets ratio, the higher the return on equity ratio, the better for the company. The banks started with a good ratio of 6.01%. They were able to maintain a steady ratio until 2007. In 2007,

the banks saw their first large decrease of about 2%. In 2008 and 2009, the ratio became negative. Return on equity becomes negative when the company experiences a net loss for the year. In 2010, the banks were able to increase the ratio to 4.45%. However, in 2011, it dropped to 3.69% and they have not been able to bring it back up to where it was in 2004. The ratio in 2014 was 3.23%, almost half of what it was in 2004. The credit unions had a ratio of 7.27% in 2004 and a ratio of 5.73% in 2014. Both of these ratios are stronger than the banks'. The credit unions also had a decrease of about 2% in 2007 and the ratio went negative in 2008. However, the credit unions returned to a positive ratio in 2009 and continue with a steady increase. There was a small decrease in 2013, but it grew again in 2014. Both the banks and credit unions were affected by the recession. Even though they were both affected, the credit unions started with a higher ratio in 2004, recovered stronger from their negative ratio in 2008, and ended 2014 with a higher ratio. Graphical representation of this data is presented below.



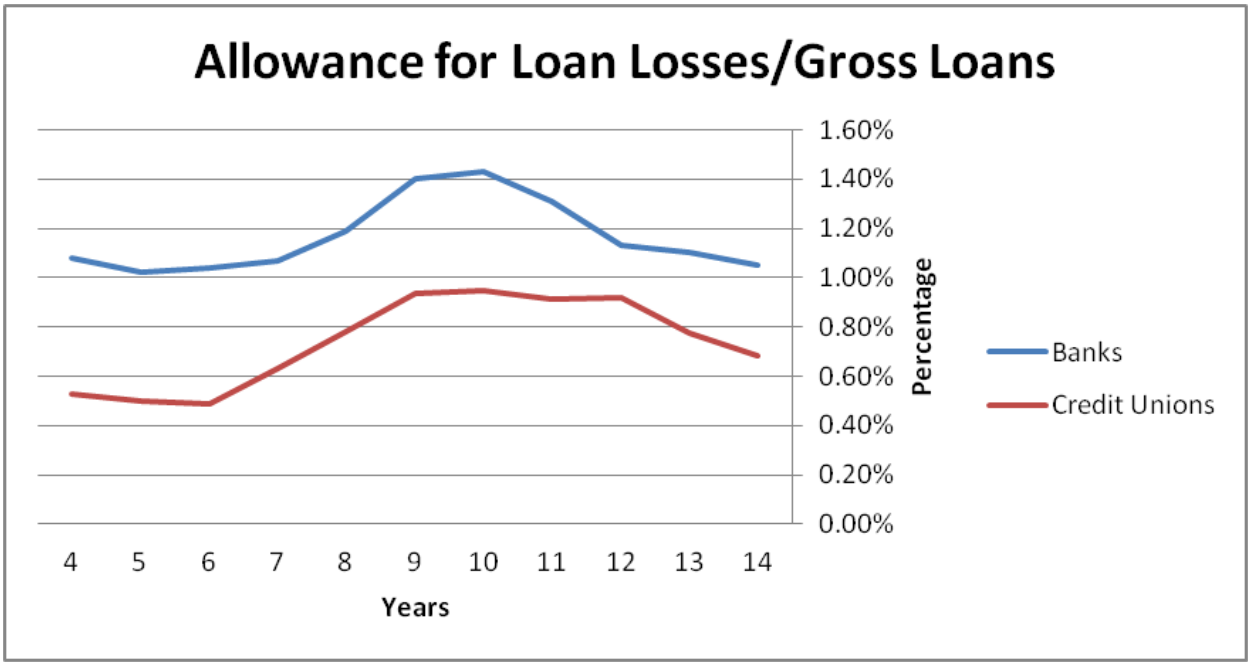
Provision for Loan Losses /Allowance for Loan Losses

The provision to allowance was calculated and averaged for both the banks and credit unions. The allowance for loan losses is an estimate of the total amount of loans that the institution expects not to collect. The estimate is made by management of the financial institution based on previous years' experiences, along with an analysis of past due loans and macroeconomic factors. The provision is the amount that the financial institution provides for or puts into the allowance each period, which represents the additional amount they deem to be uncollectible for that period. If the financial institutions' loan portfolio stays at a similar risk level, their provision to allowance ratio should stay constant. When we see an increase in this ratio, it means the institution is providing more to the allowance because they believe more of their loan portfolio might not be collected. From 2004 to 2007, the banks' ratio stayed relatively consistent, at approximately 11%. In 2008, the ratio spiked to 30%. It began to decrease in 2010. At the end of 2014, the banks ended with an average ratio of 11.72%. This shows that the ratio is beginning to become steady again. The credit unions have a very different ratio history than the banks. They ended 2004 with a ratio around 50%. The ratio increased in 2007, but then began its decrease in 2009. The ratio continued to decrease through 2014 and the credit unions ended with a ratio of 16.54%. Graphical representation of this data is presented below.



Allowance for Loan Losses/Gross Loans

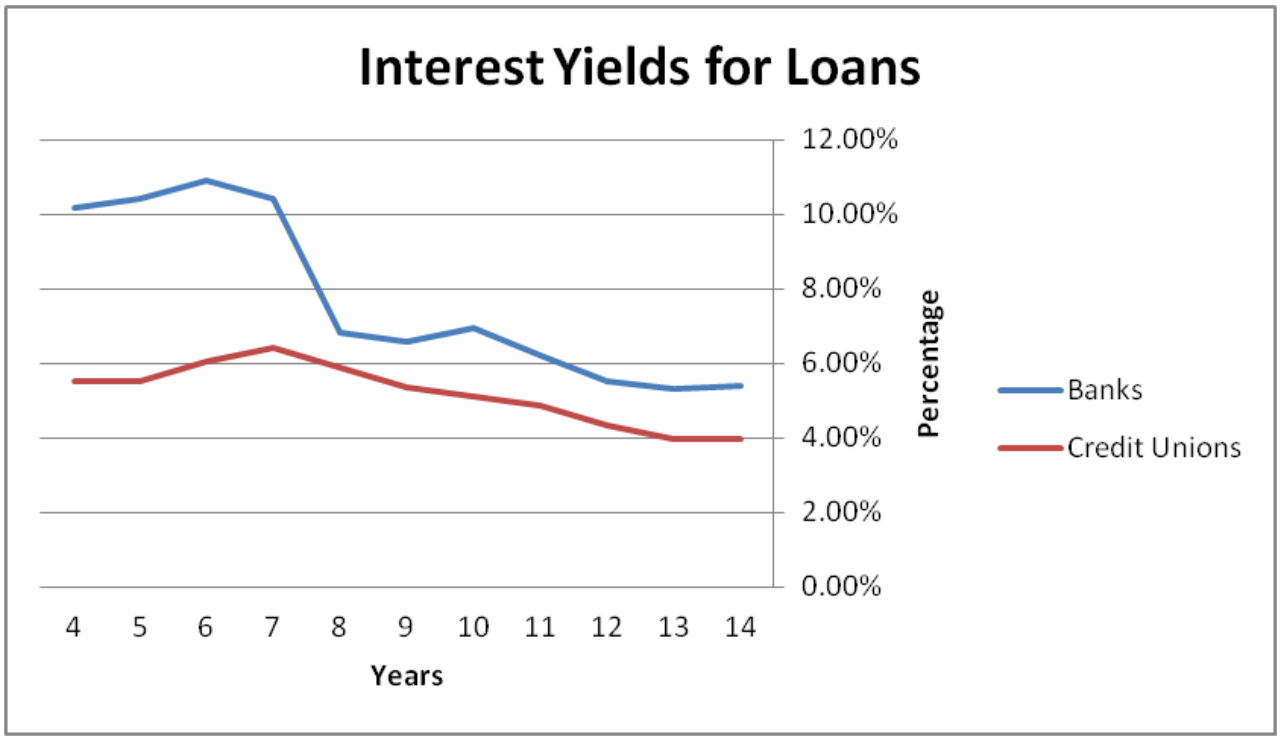
Allowance to gross loans shows the estimated amount of loans that a company expects will not be collected compared to the total amount of loans. The company would want this ratio to be low. This ratio shows the total dollar amount of the loans they are expecting not to be received compared to the total amount of loans, the company wants a smaller amount to be uncollected and a larger amount to be collected. The banks were able to keep this ratio steady during the recession. In 2004, they ended with a ratio of 1.08% and grew to its highest in 2010 with a ratio of 1.43%. The allowance to gross loans then continued to decrease and the banks ended 2014 with a ratio of 1.05%. This ratio is actually lower than their ratio in 2004. Even though the banks had a slight increase in the amount they estimated to be uncollected, they were able to control this ratio and bring it lower than before the recession. The credit unions had an average allowance to gross loans ratio of 0.53% in 2004. This is less than half of what the banks ratio was in 2004. The credit unions were also able to maintain a steady ratio over the course of 2004 to 2014. Similar to the banks, the ratio for the credit union reached its highest in 2010 with a ratio of 0.95%. In 2014, the credit unions ended with a ratio 0.69%. Even though the banks were able to bring their 2014 ratio below their 2004 ratio and the credit unions were not, the credit unions still maintain overall lower ratios than the banks. The lowest banks ratio of 1.02% is larger than the credit unions highest ratio, 0.95%. Graphical representation of this data is presented below.



Interest Yields for Loans

The interest yield for loans shows the average interest rate that customers are being charged for loans. This ratio is calculated by dividing the interest on loans by the total loans. The banks ended 2004 with an average interest rate of 10.18% on loans. This rate increased until 2007. In 2008, there was a significant decrease in the interest rate. The rate dropped from 10.40% to 6.83% from 2007 to 2008. The rate continued to decrease over the next few years, with an exception in 2010. The banks ended 2014 with an average interest rate of 5.41%, which is much more appealing to customers than the 10.18% that they ended 2004 with. The credit unions ended 2004 with an average interest rate of 5.52%. This is almost half of what the banks offered as an interest rate in 2004. The credit unions ratio increased to 6.42% in 2007, followed by a continuous decrease. They ended 2014 with an interest rate of 3.98%. Throughout the entire eleven-year span, the credit unions' interest rate was lower than the banks. This means that members are going to be charged a lower interest rate from credit unions. Therefore, it is better

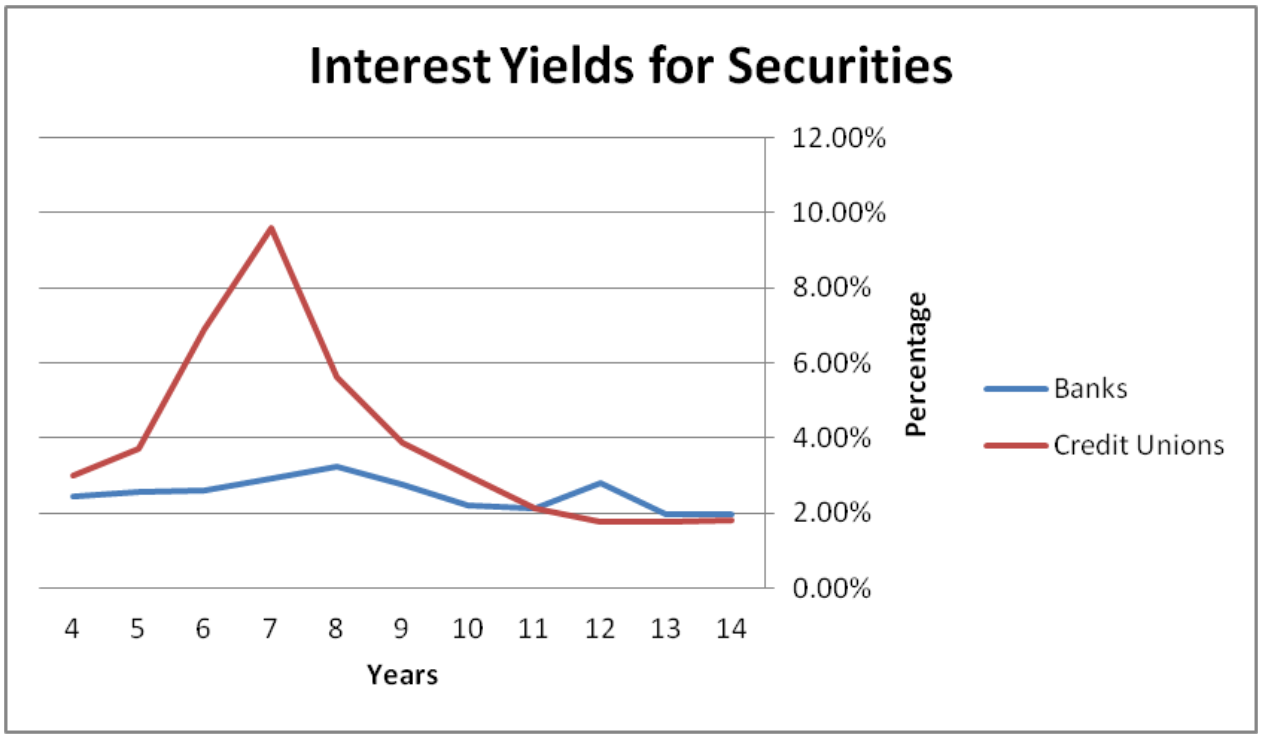
to get a loan through a credit union, if you want a lower interest rate. Graphical representation of this data is presented below.



Interest Yields for Securities

From the data, we can also look at the interest yields for securities. The interest yield for securities is calculated by dividing the investment income by the investment. This ratio will show us what rate the financial institution is earning on their investments. The higher this rate, the better because it means they are earning more income per investment. In 2004, the banks yielded a 2.43% return on their investment portfolio. This rate continued to grow until 2008 where it reached its high of 3.23%. After 2008, the rate began to decrease and the banks ended 2014 with a rate of 1.95%. The credit unions ended 2004 with a ratio of 2.98%. Their yield grew in 2006 and 2007. The rate reached its height in 2007 at 9.59%. After 2007, the rate had a continuous decrease that left them with a ratio of 1.79% in 2014. The credit unions ended 2004 with a higher rate compared to the banks. They were earning 2.98%, while the banks were

earning 2.43%. The credit unions continued to earn more on their investments until 2011. In 2011, the banks were earning 2.13% and the credit unions were earning 2.11%. These rates are very close. After 2011, the rates remain relatively close, however, the banks' rates are slightly better than the credit unions for 2012, 2013, and 2014. Overall, the credit unions performed better. They earned a higher rate on their investments for a longer period of time. Their peak rate of 9.59% is much higher than the banks peak rate of 3.23%. The credit unions earned almost three times as much on their investment as the banks did at one point throughout this time span. Graphical representation of this data is presented below.



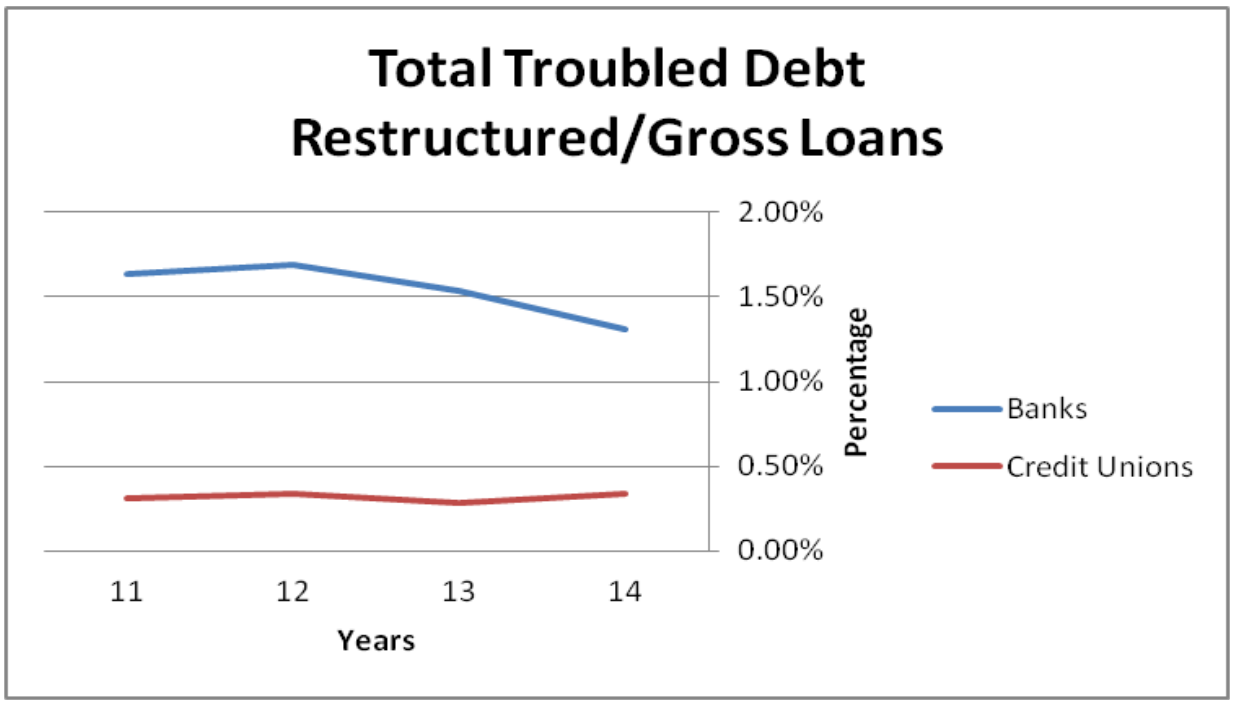
Total Troubled Debt Restructured/ Gross Loans

Debt restructuring "constitutes as troubled debt restructuring if the creditor for economic or legal reasons related to the debtor's financial difficulties grants a concession to the debtor that it would not otherwise consider" (FASB 310-40-15). The creditor grants the concession in trying to get the money they are owed; rather than foreclosing on the collateral. Sometimes it is in the

best interest of the financial institution to make concessions on the loan which will cost less in the long run. These concessions arise in two possible ways; from an agreement between the creditor and the debtor or by the court. The creditor determines the form of the concession. An example of troubled debt restructuring for a financial institution includes forgiving a few monthly loan payments, which might allow the borrower to be able to meet all monthly loan payments in the future. Although the financial institution, is 'losing' the monthly loan payments for the concession period, ultimately it would be more expensive for them to go through the legal process of trying to collect the delinquent payments and ultimately foreclosing on the property.

When looking at this data, no troubled debt restructuring (TDR) were reported until 2011. While financial institutions did not report these TDRs until 2011, it does not mean that they did not have them. In 2011 the accounting standards board issued an updated that clarified the guidelines to what was to be reported as a TDR and what was not. The clarification also states that once a loan is classified as a TDR loan, it will always be considered a TDR loan until it is either paid in full, settled, sold, or charged-off.

When comparing the banks and credit unions data, the credit unions ratio, of total TDR to gross loan, is much lower than the banks. The banks ratio goes from 1.64% in 2011 to1.31% in 2014. The credit unions had a ratio of 0.31% in 2011 and ended with a ratio of 0.34% in 2014. Even though the ratios remain stable, the credit unions ratios are better for the members. The lower this ratio, the less risk the financial institution has. These loans are restructured because they carried the risk of never being paid. When comparing that to your total gross loans, you want that to be a small percentage. Neither of these ratio are high enough to cause concern, however, the credit unions ratios are much lower, therefore, less risky, than the banks. Graphical representation of this data is presented below.



Conclusion

After reviewing the data collected and ratios calculated, I have concluded that the credit unions are more successful during a recession. In comparing the calculated ratios, the credit unions performed better throughout the eleven-year time span. Their nonperforming/delinquent loans compared to total loans were much lower than the banks, even though their ratios where slightly overstated. The return on assets and return on equity ratios were higher for the credit unions, which means that they are effectively using their assets and equity to generate net income. The allowance to gross loan ratio also showed the credit unions performing better than the banks. The allowance is a contra-asset account, with the amount that the institution believes they will not collect. The lower this ratio, the better because it means that the company plans on collecting a larger percentage of their loan receivables. The credit unions ratio remained lower than the banks throughout the entire eleven-year period. The credit unions showed a lower interest yield on loans than the banks. This is better because the credit unions were able to

maintain charging their members a lower interest during the recession. A borrower, or loan customer, will always want to get the lowest interest rate possible. The data shows that credit unions have lower rates than banks. The troubled debt restructuring loans also showed the credit unions performing better than the banks. The credit unions maintained a lower ratio compared to the banks. This means that less of their total loans have been classified as troubled debt restructuring, and therefore, more of their loans are performing and less risky.

While the majority of the ratios showed credit unions performing better than banks, some ratios showed banks doing better than credit unions. The provision to allowance shows the credit unions ratio much higher than the banks until 2011, where they grow close. Even though they grew close, the credit unions' ratio remained higher than the banks. While this ratio works in the banks favor, the credit unions had six out of eight ratios in their favor. This suggests that the credit unions are less risky. Customers care about the security of their deposits and obtaining credit at a low interest rate, especially during a recession. Since the data indicates that credit unions are less risky, they can provide customers with lower interest rates on loans, while also providing them with the security that the credit union is unlikely to fail. I conclude that credit unions will be more successful than banks during a recession.

References

"Auto Loans Home Equity Lines Direct Federal Credit Union Boston, MA." *Auto Loans Home Equity Lines Direct Federal Credit Union Boston, MA.* N.p., n.d. Web. 16 Apr. 2016.

"Bank Eagle. Personal Banking." *Personal Banking.* N.p., n.d. Web. 16 Apr. 2016.

"Bank or Credit Union: Which One Is Right for You?" *About.com Money.* N.p., n.d. Web. 16 Apr. 2016

"Beverly Bank: Your Community Bank." *Beverly Bank: Your Community Bank.* N.p., n.d. Web. 16 Apr. 2016.

"Branch/ATM Hours & Locations." *Sharon Credit Union.* N.p., n.d. Web. 16 Apr. 2016.

"Bridgewater Credit Union." N.p., n.d. Web. 16 Apr. 2016.

"Central One Federal Credit Union - Home." *Central One Federal Credit Union - Home.* N.p., n.d. Web. 16 Apr. 2016.

Chatterji, A., J. Luo, and R. C. Seamans. "Banks VS. Credit Unions After the Financial Crisis." *Academy of Management Proceedings* 2015.1 (2015): 15855. Web.

"City of Boston Credit Union - Home." *City of Boston Credit Union - Home*. N.p., n.d. Web. 16 Apr. 2016.

"Credit Unions and Banks -- What's the Difference? Bankrate.com." *Credit Unions and Banks -- What's the Difference? Bankrate.com.* N.p., n.d. Web. 16 Apr. 2016.

"Credit Unions vs. Banks - Differences, Pros & Cons." *Money Crashers*. N.p., n.d. Web. 16 Apr. 2016.

"CUNA: THE CREDIT UNION DIFFERENCE." *CUNA: THE CREDIT UNION DIFFERENCE.* N.p., n.d. Web. 16 Apr. 2016.

"Everett Bank." *Everett Bank.* N.p., n.d. Web. 16 Apr. 2016.

"FASB Accounting Standards Codification." *FASB Accounting Standards Codification.* N.p., n.d. Web. 16 Apr. 2016.

"FDIC: Institution Directory." *FDIC: Institution Directory*. N.p., n.d. Web. 16 Apr. 2016.

Gold, Jason. "Don't Make Credit Unions Die for Banks Sins." *US News*. N.p., 17 Sept. 13. Web. 16 Apr. 2016.

"Haverhill Bank- Just One Bank." *Haverhill Bank- Just One Bank.* N.p., n.d. Web. 16 Apr. 2016.

"Historical Timeline of Credit Unions." History Timeline of Credit Unions. N.p., n.d. Web. 16 Apr. 2016

"Home - UMassFive." *Home - UMassFive.* N.p., n.d. Web. 16 Apr. 2016.

"Investopedia - Educating the World about Finance." *Investopedia.* N.p., n.d. Web. 16 Apr. 2016.

"Learn More About ACB - Adams Community Bank." *Adams Community Bank.* N.p., n.d. Web. 16 Apr. 2016.

Mechanics Cooperative, N.p., n.d. Web. 16 Apr. 2016.

"MIT Federal Credit Union. Cambridge MA Credit Union. Banking." *MIT Federal Credit Union. Cambridge MA Credit Union. Banking*. N.p., n.d. Web. 16 Apr. 2016.

"New!!! Pay Your Crescent Loan." *Home*. N.p., n.d. Web. 16 Apr. 2016.

"News & Announcements." *Polish National*. N.p., n.d. Web. 16 Apr. 2016.

"Norwood Bank, MA - Personal & Business Banking , Mortgages in MA." *Norwood Bank.* N.p., n.d. Web. 16 Apr. 2016.

"Quincy Credit Union Home." *Quincy Credit Union Home*. N.p., n.d. Web. 16 Apr. 2016.

"Research a Credit Union." *Research a Credit Union*. N.p., n.d. Web. 16 Apr. 2016.

"Research a Credit Union." *Research a Credit Union*. N.p., n.d. Web. 16 Apr. 2016.

"Return on Equity Ratio, Analysis, Formula, Example." *My Accounting Course.* N.p., n.d. Web. 16 Apr. 2016.

"Savers Bank." *Personal Banking, Business Banking Mortgages, Loans and Investments*. N.p., n.d. Web. 16 Apr. 2016.

"Seamens Bank, Branches from Provincetown to Eastham." *Seamens Bank*. N.p., n.d. Web. 16 Apr. 2016.

Shin, Laura. Forbes. Forbes Magazine, 30 June 2014. Web. 16 Apr. 2016

"SpencerBANK." SpencerBANK. N.p., n.d. Web. 16 Apr. 2016.

"The Banking System: Commercial Banking - Key Ratios/Factors | Investopedia." Investopedia. N.p., 26 July 2011. Web. 16 Apr. 2016.

"Welcome | GFA Federal Credit Union." Welcome | GFA Federal Credit Union. N.p., n.d. Web. 16 Apr. 2016.

"What Is the Difference Between a Commercial Bank and a Savings & Loan Bank?" - Budgeting Money. N.p., n.d. Web. 16 Apr. 2016.

"What's the Difference between Publicly - and Privately-held Companies" Investopedia. *Investopedia*. N.p. 08 Dec. 2004. Web. 16 Apr. 2016

"Your Money at Your Fingertips with Randolph Checking." Randolph Savings Bank. N.p., n.d. Web. 16 Apr. 2016.

Woodruff, Mandi. "Here's Why You're Better Off Using A Credit Union Rather Than A Big Bank." Business Insider. Business Insider, Inc, 30 Jan. 2014. Web. 16 Apr. 2016.